

REMARKS/ARGUMENTS

Claims 2-31 remain in the application.

Rejection Status

In the October 11, 2006 office action, independent claims 1-31 were all rejected under 35 U.S.C. 103(a) as being unpatentable over Harari, et al (US 5,887,145) (hereinafter referred to as "Harari") in view of Hosaka, et al (US 6,408,352) (hereinafter referred to as "Hosaka"). Dependent claims 26-28 were rejected under 35 U.S.C. 112 as being indefinite. Applicant respectfully notes that claim 1 was cancelled prior to the office action in an August 2004 preliminary amendment.

Applicant respectfully requests reconsideration of the claims. In the remainder of these remarks the Applicant will show that the 103(a) rejections of claims 2-31 (including independent claim 2) are improper, and will explain amendments to dependent claims 26-28 that overcome the 112 rejections.

Review of the Claimed Invention

The following description is taken verbatim from the application as filed, however the underlining is added herein for emphasis.

[0019] The utility of portable computer hosts, such as PDAs, is enhanced by methods and apparatus for closed-case removable expansion cards having a removable memory in both a first and second embodiment. In both the first and second embodiments the closed-case removable expansion cards preferably use a Type II CompactFlash form factor. In the first embodiment the removable memory is in combination with an external-I/O connector or permanently attached external-I/O device, providing both I/O and memory functions in a single closed-case removable expansion card. This increases the expansion functional density for portable computer hosts, such as PDAs. That is, it

increases the amount of functionality that can be accommodated within a given volume allocation for expansion devices. It also provides a viable alternative to 2-slot implementations.

[0020] In the second embodiment the removable memory is a private memory for application specific circuitry within the closed-case-removable expansion card. This enhances the utility of portable computer hosts, such as PDAs, as universal chassis for application specific uses. The standard CompactFlash physical and electrical interface couples the application specific card to the host, which provides user interface functions for the application. The cards include a top located slot and an internal connector for accepting a MultiMediaCard as the private removable memory. In addition, the application specific card will generally have some manner of I/O to required external devices, such as scanning devices, sensors, or transducers. Otherwise, all functionality for the application specific function is self-contained within the application specific card.

[0044] In a first embodiment of the invention, circuitry 160 includes I/O adapter circuitry and removable memory adapter circuitry. The I/O adapter functionality may include one or more of, but is not limited to, Ethernet, serial port, audio, telephone, antenna, and special-function interfaces such as bar code and other scanners. The removable memory adapter functionality may include one or more of, but is not limited to, main memory expansion, mass-media emulation, and other host-based special-purpose memory applications.

[0045] In accordance with a second embodiment, circuitry 160 further includes application-specific circuitry for which the management of the removable memory is an ancillary function to the primary function of the specific application. Specific examples of such application-specific expansion cards having both I/O and removable memory are provided in later sections.

[0046] In preferred implementations of both of the first and second embodiments mentioned above, the functions performed by the removable memory are those of a MultiMediaCard adapter as illustrated in the MultiMediaCard adapter section of the MultiMediaCard system architecture diagram of Figure 4. If the removable memory is being used to provide host-base memory expansion, such as described for the first embodiment, then the host must provide the functionality illustrated by the Application and Application Adapter sections of Figure 4. If the removable memory is

being used at least sometimes as an ancillary memory (at least sometimes private) to the application-specific circuitry contained on the expansion card, such as for the second embodiment, then the application-specific circuitry must provide the Application and Application Adapter section functionality, or else the application-specific circuitry must call on host services for such functionality.

[0056] In accordance with the present invention, an expansion card having I/O and removable memory is inserted into a computer host. The I/O is coupled to a receiver capable of receiving a large number of broadcast messages and services. The removable memory contains subscriber services information for each individual user. The expansion card uses the subscriber services information to filter out messages and services not applicable to the present status of the subscriber. The PDA's display/input-tablet provides the virtual controls and visual indicators for the display and access of captured messages and services.

Overview of the Reference(s) Cited by the Examiner

Harari teaches removable expansion cards. As Harari was not sufficient to support a 102 or 103 rejection by itself, the remarks/arguments in this paper center on Hosaka.

Hosaka teaches “a card connection adaptor”, the objects of which are to be “capable of preventing disconnection of a small-size card therefrom when the adaptor is fitted in a card slot”, “to provide a card connection adaptor which is capable of prohibiting a small-size card from being inserted thereinto or withdrawn therefrom when the adaptor is fitted in a card slot”, and “to provide a card connection adaptor which is constructed so as to be able to give an indication of the presence or absence of a small-size card in the adaptor when the adaptor is fitted in a card slot” (col. 2, lines 66-67; col. 3, lines 1-14). The card connection adaptor comprises “signal conversion circuitry connected to the first connector and the second connector for performing signal conversion between a first-standard-compliant signal and a second-standard-compliant signal” (col. 3, lines 21-24).

Hosaka Text Cited by Examiner

The following is a detailed synopsis of the text of Hosaka cited by the Examiner in support of the 35 U.S.C. 103(a) rejection:

col. 1, line 26: Describes CF (ComptactFlash®) as a type of card.

col. 4, lines 17-19: Describes that “signal conversion circuitry may include a signal processing circuit for converting signal format between the first-standard-compliant signal and the second-standard-compliant signal”.

col. 5, lines 6-10: Describes examples of “cards designed in compliance with standards,” the standards stipulating that an “input/output control circuit be present in the card “, such as “SmartMedia cards, MultiMedia cards, Miniature cards, MemoryStick cards and SIM (subscriber identity module) cards”.

col. 12, lines 4-25: Describes “circuitry for performing signal conversion between a first-standard-compliant signal and a second-standard-compliant signal”. The circuitry comprises “control IC 41, an EEPROM 42, a power source IC 43, a filtering circuit 44, electrolytic capacitors 45, 46, an oscillator circuit 47, and other circuit elements 48”. “The signal conversion circuit performs pin configuration conversion” and “includes an input/output control circuit for controlling data input and output of the card”.

Rejections of Independent Claim 2 is Improper

It is respectfully submitted that the 103(a) rejections of independent claim 2 over Harari in view of Hosaka is improper. As will be established below, Harari in view of Hosaka does not teach or suggest every limitation of the claimed invention, as is required of a 103 rejection. It is further respectfully offered that the Examiner appears to be improperly ignoring one or more limitations in making the 103 rejection of independent claim 2, as will also be detailed below.

Specific Shortcomings of the Rejection of Independent Claim 2

Applicant's claim 2 includes the following limitation:

Claim 2:

“a removable expansion card having a second slot to receive the removable module, removable module interface circuitry to manage data transfers with the removable module, and communications circuitry adapted to have behavior based at least in part on the subscriber services information contained in the removable module”

If the Examiner is reading the claimed “communications circuitry adapted to have behavior based at least in part on the subscriber services information contained in the removable module” onto Hosaka's card connection adaptor, then the Examiner is improperly ignoring the “adapted to have behavior based at least in part on the subscriber services information” portion of that limitation.

There is no suggestion anywhere in Hosaka that his adapter card has anything other than signal conversion circuitry, and in particular nothing about communication circuitry with subscriber services information dependent behavior. Hosaka teaches a card adapter “designed to adapt a MultiMedia card to a CF card slot” and is otherwise “applicable to conversion between any other different standards” including SIM cards (col. 19, lines 60-63). Hosaka's conversion circuitry is overviewed at column 4, lines 17-20, and is detailed at column 12, lines 6-25.

Hosaka's circuitry only does signal conversion between a first card interface standard and another card interface standard. Hosaka does teach an adapter card for coupling a SIM card to a host having a CF slot. Nevertheless, there is nothing in Hosaka (alone, or in combination with Harari) to suggest:

that Hosaka's adapter does anything other than signal conversion,

that Hosaka's signal conversion process is aware of the information content of the signals being converted, or

that the behavior of Hosaka's adapter circuitry is a function of the information content.

Signal conversion, as Hosaka uses that term, refers to adaptation between different analog signal formats and pin configurations. The signals being adapted, since they include signals to and from memory chips, are going to include signal levels dynamically varying in correspondence with logical ones and zeros in various patterns as read from or written to the removable memory. Nevertheless, no one skilled in the art would reasonably refer to this signal conversion process as having different "behavior" as a result of processing these different logical signals. Hosaka's signal conversion process "behaves" in a invariant manner that is unrelated to and unaware of the information undergoing signal conversion. Stated differently, there is nothing that suggests that any circuitry in Hosaka is aware of the information content of the removable module as part of the signal conversion process. To represent that Hosaka's signal conversion circuitry exhibits behavior based on the information content of the removable memory is not a reasonable construction of the scope of the claim language.

Amendments Overcoming the 35 U.S.C. 112 Rejections of Dependent Claims 26-28

At the Examiner's prompting, Applicant's has amended claims 26-28 to more distinctly claim and particularly point out the invention, and not for any prior art reasons.

35 U.S.C. 103 Rejections of the Dependent Claims

As dependent claims 3-31 incorporate all of the limitations of independent claim 2, their 35 U.S.C. 103 rejection is likewise without proper basis. In view of the above arguments regarding the patentability of the independent claim, a further analysis of the Examiner's comments with respect to the dependent claims does not seem warranted at this time.

Request for Reconsideration and Closing

Reconsideration of the claims is respectfully requested, in view of the foregoing. It is believed that no new matter has been introduced via this amendment. Claim 2-31 are pending in the application.

In view of the foregoing, all of the claims now pending in this application are believed by Applicant to be in condition for allowance. The issuance of a formal Notice of Allowability at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of the application, please telephone the undersigned at the number indicated below.

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